

WHAT IS CLAIMED IS:

1. A method for manufacturing a refastenable absorbent garment comprising:

moving a continuous absorbent garment subassembly in a first machine direction, wherein said continuous absorbent garment subassembly comprises a continuous front body panel web, a continuous rear body panel web and a plurality of discrete crotch portions spaced along said first machine direction and extending between said continuous front and rear body panel webs;

moving a fastener material in a second machine direction;
cutting said fastener material to define a plurality of fastener members;

successively rotating each of said fastener members about an axis substantially perpendicular to said second machine direction; and

applying each of said rotated fastener members to one of said continuous front and back panel webs.

2. The invention of claim 1 wherein said moving said fastener material in said second machine direction comprises moving at least two strips of said fastener material in said second machine direction.

3. The invention of claim 2 wherein said moving at least said two strips of said fastener material in said second machine direction comprises moving a web of fastener material in said second machine direction, cutting said web of fastener material along said second machine direction and thereby forming said at least said two strips of said fastener material.

4. The invention of claim 3 further comprising separating said at least said two strips in said cross direction to form a spaced apart relationship therebetween.

5 5. The invention of claim 3 wherein said cutting said web of fastener material along said second machine direction comprises making a serpentine cut along said second machine direction and thereby forming a plurality of tabs on two strips of fastener material.

10 6. The invention of claim 5 wherein said axis is a first axis and further comprising rotating each of said two strips of fastener material along a second axis parallel to said second machine direction such that said plurality of tabs on each of said at least two strips face outboard in opposite directions.

15 7. The invention of claim 2 wherein said cutting said fastener material to define a plurality of fastener members comprises cutting each of said at least two strips of fastener material to form at least two streams of said plurality of fastener members.

20 8. The invention of claim 7 wherein said successively rotating each of said fastener members comprises successively rotating each of said fastener members in each of said at least two streams of said plurality of fastener members.

25 9. The invention of claim 8 wherein said at least two streams of said plurality of fastener members comprises a plurality of fastening systems, wherein each of said plurality of fastening systems comprises one of said fastener members from each of said streams of said plurality of fastener members.

 10. The invention of claim 9 wherein said successively rotating each of said fastener members in each of said at least two streams of said plurality of fastener members comprises simultaneously rotating said fastener members in each of said fastening systems.

 11. The invention of claim 10 wherein said applying each of said rotated fastener members to said one of said continuous front and back panel webs

comprises successively applying each of said fastening systems to said one of said continuous front and back panel webs.

12. The invention of claim 9 wherein said at least two streams of said plurality of fastener members comprises two streams of said plurality of fastener members, and wherein said successively rotating each of said fastener members in each of said two streams of said plurality of fastener members comprises successively, simultaneously rotating pairs of said fastener members each comprised of one fastener member from one of said plurality of fastening systems and one fastener member from a next successive fastening system and wherein said applying each of said rotated fastener members to said one of said continuous front and back panel webs comprises applying said plurality of fastening systems to said one of said continuous front and back panel webs by successively applying said pairs of fastener members to said one of said continuous front and back panel webs.

13. The invention of claim 12 wherein said fastener members in each of said pairs of fastener members each comprise at least one tab member facing away from said at least one tab member of the other fastener member of said pair of fastener members.

14. The invention of claim 9 wherein said at least two streams of said plurality of fastener members comprises a first and second stream of said plurality of fastener members, and wherein said successively rotating each of said fastener members in each of said at least two streams of said plurality of fastener members said applying each of said rotated fastener members to said one of said continuous front and back panel webs comprises rotating each of said fastener members in said first stream of said plurality of fastener members and applying each of said rotated fastener members in said first stream to said one of said continuous front and back panel webs at a first location and rotating each of said fastener members in said second stream of said plurality of fastener members and applying each of said rotated fastener members in said second stream to said one of said continuous

front and back panel webs at a second location, wherein said second location is located downstream of said first location.

15. The invention of claim 1 wherein said fastener members each comprise a refastenable portion and a base portion, wherein said applying each of said rotated fastener members to said one of said continuous front and back panel webs comprises releasably engaging said one of said continuous front and back panel webs with said refastenable portion.

16. The invention of claim 15 wherein said applying each of said rotated fastener members to said one of said continuous front and back panel webs further comprises attaching said base portion to said one of said continuous front and back panel webs.

17. The invention of claim 1 further comprising successively cutting said one of said continuous front and back panel webs along a cross direction and thereby forming a plurality of cross direction cuts in said one of said continuous front and back panel webs, wherein said cross direction cuts are spaced along said one of said continuous front and back panel webs in said first machine direction.

18. The invention of claim 17 wherein said fastener member comprises a base portion and a refastenable portion, and wherein said applying each of said rotated fastener members to said one of said continuous front and back panel webs comprises applying said base portion and said refastenable portion to said one of said continuous front and back panel webs on opposite sides of one of said cross direction cuts.

19. The invention of claim 18 wherein said plurality of said cross direction cuts are made in said continuous front body panel web and wherein said plurality of said fastener members are applied to said continuous front body panel web.

20. The invention of claim 17 wherein said cross direction cut is a perforated cut.

21. The invention of claim 17 wherein said successively cutting said one of said continuous front and back panel webs along a cross direction comprises cutting both of said continuous front and back panel webs along said cross direction and thereby forming a plurality of absorbent garments.

22. The invention of claim 1 wherein said continuous front body panel web comprises a plurality of landing members spaced along said first machine direction.

23. The invention of claim 1 wherein said continuous front body panel web comprises a plurality of elastic elements extending therealong in said first machine direction.

24. The invention of claim 23 further comprising deactivating said plurality of said elastic elements in landing zones successively spaced along said first machine direction.

25. The invention of claim 23 further comprising successively attaching a plurality of landing members to said continuous front body panel web at said successively spaced landing zones.

26. The invention of claim 1 further comprising folding said crotch portion, wherein said continuous front and rear body panel webs are facing each other.

27. The invention of claim 26 further comprising successively attaching said continuous front and rear body panel webs along a cross direction and thereby forming a plurality of cross direction side seams spaced along said first machine direction.

28. The invention of claim 27 further comprising cutting said continuous front and rear body panel webs at said plurality of said side seams to form a plurality of absorbent garments.

29. The invention of claim 1 wherein said continuous absorbent garment subassembly further comprises an outer cover forming in part said continuous front and back body panel webs and said plurality of said crotch portions, and wherein each of said plurality of said crotch portions comprises a retention portion and further comprising successively cutting said outer cover between said retention portions and thereby forming leg openings.

30. The invention of claim 1 wherein said first and second machine directions are parallel.

31. The invention of claim 1 wherein said successively rotating each of said fastener members comprises successively rotating each of said fastener members approximately 90 degrees.

32. A method for manufacturing a refastenable absorbent garment comprising:

moving a base web in a first machine direction;

moving at least two strips of fastener material in a second machine direction;

cutting said at least two strips of fastener material to define at least a first and second stream of a plurality of fastener members;

successively rotating each of said fastener members about an axis substantially perpendicular to said second machine direction in each of said first and second streams; and

applying each of said rotated fastener members in each of said first and second streams to said base web, wherein said fastener members in said first stream are sequentially located relative to said fastener members in said second

stream on said base web in an alternating relationship along said first machine direction.

33. The invention of claim 32 wherein said moving at least said two strips of said fastener material comprises moving a web of fastener material along said second machine direction, cutting said web of fastener material along said second machine direction and thereby forming said at least said two strips of said fastener material.

34. The invention of claim 33 further comprising separating said at least said two strips in a cross direction to form a spaced apart relationship therebetween.

35. The invention of claim 33 wherein said cutting said web of fastener material along said second machine direction comprises making a serpentine cut along and thereby forming a plurality of tabs on each of said at least two strips of fastener material.

36. The invention of claim 32 wherein said at least said first and second stream of said plurality of fastener members comprises a plurality of fastening systems, wherein each of said plurality of fastening systems comprises one of said fastener members from each of said first and second streams of said plurality of fastener members, wherein said one fastener member from each of said first and second streams in each of said fastening systems are consecutively positioned on said base web in said alternating sequence.

37. The invention of claim 36 wherein said successively rotating each of said fastener members in each of said at first and second streams of said plurality of fastener members comprises simultaneously rotating said fastener members in each of said fastening systems.

38. The invention of claim 37 wherein said applying each of said rotated fastener members to said base web comprises successively applying each of said fastening systems to said base web.

39. The invention of claim 36 wherein said successively rotating each of said fastener members in each of said at first and second streams of said plurality of fastener members comprises successively, simultaneously rotating pairs of said fastener members each comprised of one fastener member from one of said plurality of fastening systems and one fastener member from a next successive fastening system and wherein said applying each of said rotated fastener members in each of said first and second streams to said base web comprises applying said plurality of fastening systems to said base web by successively applying said pairs of fastener members to said base web.

40. The invention of claim 32 wherein said successively rotating each of said fastener members in each of said first and second streams of said plurality of fastener members and said applying each of said rotated fastener members in each of said first and second streams to said base web comprises rotating each of said fastener members in said first stream of said plurality of fastener members and applying each of said rotated fastener members in said first stream to said base web at a first location and rotating each of said fastener members in said second stream of said plurality of fastener members and applying each of said rotated fastener members in said second stream to said base web at a second location, wherein said second location is located downstream of said first location.

41. The invention of claim 32 further comprising successively cutting said base web along a cross direction and thereby forming a plurality of cross direction cuts in said base web, wherein said cross direction cuts are spaced along said base web in said first machine direction.

42. The invention of claim 41 wherein each of said fastener members comprises a base portion and a refastenable portion, and wherein said applying

each of said rotated fastener members in each of said first and second streams to said base web comprises applying said base portion and said refastenable portion to said base web on opposite sides of one of said cross direction cuts.

43. The invention of claim 41 wherein said cross direction cut is a perforated cut.

44. The invention of claim 32 wherein said base web comprises a plurality of landing members spaced along said first machine direction.

45. The invention of claim 32 wherein said base web comprises a plurality of elastic elements extending therealong in said first machine direction.

46. The invention of claim 45 further comprising deactivating said plurality of said elastic elements in landing zones successively spaced along said first machine direction.

47. The invention of claim 46 further comprising successively attaching a plurality of landing members to said base web at said successively spaced landing zones.

48. The invention of claim 32 wherein said first and second machine directions are parallel.

49. The invention of claim 32 wherein said successively rotating each of said fastener members in said first and second streams comprises successively rotating each of said fastener members approximately 90 degrees.

50. An apparatus for fabricating a refastenable absorbent garment subassembly comprising a base web and a plurality of fastening systems each comprising a first and second fastener sequentially spaced along the base web in an alternating relationship, the apparatus comprising:

a rotator adapted to rotate at least one of the first and second fasteners; and

a construction drum rotating about an axis and positioned adjacent said rotator, wherein said construction drum is adapted to carry the base web as it moves in a machine direction and is further adapted to receive the at least one of the rotated first and second fastener on the base web as the base web is carried by said construction drum.

51. The invention of claim 50 wherein said rotator comprises a first rotator adapted to rotate said first fastener and a second rotator adapted to rotate said second fastener, wherein said second rotator is positioned downstream of said first rotator.

52. The invention of claim 50 wherein said rotator is adapted to simultaneously rotate said first and second fasteners.

53. The invention of claim 50 further comprising a web perforator adapted to perforate the base web in a cross direction upstream of said construction drum.

54. The invention of claim 50 further comprising an elastic applicator positioned upstream of said construction drum and adapted to apply a plurality of elastic elements to the base web.

55. The invention of claim 54 further comprising an elastic deactivator positioned upstream of said construction drum and downstream of said elastic applicator, said elastic deactivator adapted to deactivate at least a portion of the plurality of elastic elements.